SARS-CoV-2 Spike RBD Alexa Fluor® 750-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 1042425

Catalog Number: FAB10827S

100 µg

DESCRIPTION

Species Reactivity	SARS-CoV-2
Specificity	Detects SARS-CoV Spike RBD in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 1042425
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line CHO-derived SARS-CoV Spike RBD Arg306-Phe527 Accession # NP_0828851.1
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

Flow Cytometry	Titration recommended for optimal concentration with starting range of 0.1-1 µg/1 million cells. Sample used for this experiment was SARS-CoV-2 Spike S1 protein bound to ACE-2 in HEK293 Human Cell Line Transfected with Human ACE-2 and eGFP

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** • 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

SARS-CoV was discovered in association with cases of severe acute respiratory syndrome (SARS) that infected more than 8,000 persons with over 900 fatalities worldwide in 2002-2003 (1). It belongs to a family of viruses known as coronaviruses that also include MERS and SARS-Cov2 that causes the global pandemic coronavirus disease 2019 (Covid-19). Coronavirus is commonly comprised of four structural proteins: Spike protein(S), Envelope protein (E), Membrane protein (M), and Nucleocapsid protein (N) (1). SARS-CoV S Protein is a type-I trimerized membrane glycoprotein that mediates membrane fusion and viral entry. As with most coronaviruses, proteolytic cleavage of the S protein into two distinct peptides, S1 and S2 subunits, is required for activation. The S1 subunit is focused on attachment of the protein to the host receptor while the S2 subunit is involved with cell fusion (2-4). A metallopeptidase, angiotensin-converting enzyme 2 (ACE-2), has been identified as a functional receptor for SARS-CoV through interaction with a receptor binding domain (RBD) located at the C-terminus of S1 subunit (5, 6). Based on amino acid (aa) sequence homology, the RBD domain of SARS-Cov shares 73% and 24% homology with RBD domain of SARS-CoV2 and MERS, respectively. Before binding to the ACE-2 receptor, structural analysis of the S1 trimer shows that only one of the three RBD domains in the trimeric structure is in the "up" conformation. This is an unstable and transient state that passes between trimeric subunits but is nevertheless an exposed state to be targeted for neutralizing antibody therapy (7). Antibodies to S protein especially the RBD region of SARS-CoV have been shown to inhibit interaction with the ACE-2 receptor, confirming RBD as an attractive target for vaccinations or antiviral therapy (8).

References:

1. Rota, P.A. *et al.* (2003) Science **300**:1394.
2. Bosch, B.J. *et al.* (2003). J. Virol. **77:**8801.
3. Belouzard, S. *et al.* (2009) Proc. Natl. Acad. Sci. USA **106:**5871.
4. Millet, J.K. and G. R. Whittaker (2015) Virus Res. **202**:120.
5. Li, W. *et al.* (2003) Nature **426**:450.
6. Wong, S.K. *et al.* (2004) J. Biol. Chem. **279**:3197.
7. Ortega, J.T. *et al.* (2020) EXCLI J. **19**:410.
8. Du, L. *el al.* (2009) Nat. Rev. Microbiol. **7**:226.

PRODUCT SPECIFIC NOTICES

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